

WE CLAIM:

1. A cargo restraint apparatus for cargo comprising:

(a) a pallet with a reel mounting surface;

(b) a reel comprising a housing affixed to the mounting surface of the pallet, a spool rotatably mounted upon an axle attached to the housing, a ratchet wheel having a plurality of teeth coaxially linked to the spool, and a pawl pivotally mounted within the housing which releasably engages the teeth of the ratchet with a pawl blade on the pawl, thereby forming a reel locking mechanism;

(c) a strap retractably wound around the spool of the reel for holding the cargo on the pallet, so that the strap can be unwound from the spool to wrap over the cargo whereupon release of the tension and retraction of the strap locks the pawl blade into the teeth of the ratchet thereby locking the spool in place and preventing further extension of the strap to securely hold the cargo to the pallet; and

(d) a lock release comprising a pressure plate and a release shaft having a rotation restricting widthwise cross-section slidably mounted on the pallet adjacent to the reel and projecting from the pressure plate and extending towards the pawl, whereby upon application of a force to the pressure plate the force is transmitted to strike and pivot the pawl thereby removing the pawl blade from the teeth of the ratchet to allow the spool to turn and the strap to extend, thereby releasing the tension holding the cargo to the pallet.

2. The cargo restraint apparatus of Claim 1 wherein the lock release further comprises at least one retainer means attached to the release shaft which keeps the lock release from separating from the pallet.

3. The cargo restraint apparatus of Claim 2 wherein the retainer is selected from the group consisting of pins, clips, and fins on or through the release shaft.

4. The cargo restraint apparatus of Claim 2 wherein the lock release further comprises a spring which maintains the release shaft in a retracted position away from the pawl until the force is applied to the pressure plate.

5. The cargo restraint apparatus of Claim 1 wherein the release shaft further comprises one or more stops which keep the release shaft from overextending inwardly when the force is applied to the pressure plate.

6. The cargo restraint apparatus of Claim 1 wherein the lock release further comprises one or more stabilizer shafts adjacent to the release shaft which stabilize the lock release when the force is applied to the pressure plate off center.

7. The cargo restraint apparatus of Claim 1 wherein the lock release is mounted within a recess in at least one side of the pallet.

8. The cargo restraint apparatus of Claim 7 wherein the pressure plate extends from the recess such that it can be kicked by a user to release the strap around the cargo when the pallet is in a position to be unloaded.

9. A method of using a cargo restraint apparatus comprising:

(a) providing the cargo restraint apparatus for cargo comprising a pallet with a reel mounting surface, a reel comprising a housing affixed to the mounting surface of the pallet, a spool rotatably mounted upon an axle attached to the housing, a ratchet wheel having a plurality of teeth coaxially linked to the spool, and a pawl pivotally mounted within the housing which releasably engages the teeth of the ratchet with a pawl blade on the pawl, thereby forming a reel locking mechanism, a strap retractably wound around the spool of the reel for holding the cargo on the pallet, so that the strap can be unwound from the spool to wrap over the cargo whereupon release of the tension and retraction of the strap locks the pawl blade into the teeth of the ratchet thereby locking the spool in place and preventing further extension of the strap to securely hold the cargo to the pallet; and a lock release comprising a pressure plate and a release shaft having a rotation restricting widthwise cross-section slidably mounted on the pallet adjacent to the reel and projecting from the pressure plate and extending towards the pawl;

(b) positioning the cargo upon the pallet;

(c) extending the strap around the cargo;

(d) retracting the strap to secure the cargo upon the pallet whereby the pawl blade pivots into the teeth of the ratchet to lock the spool of the reel; and

(e) applying a force to the pressure plate of the lock release which transmits the force to strike and pivot the pawl which disengages the pawl blade from the teeth of the ratchet, allowing the reel to freely rotate and the strap upon the reel to extend and release the cargo from the pallet.

10. The method of Claim 9 wherein the force to the pressure plate is applied by a user kicking the pressure plate to release the cargo from the pallet.

11. In a cargo restraint apparatus of the type with a reel having a pawl, ratchet and strap fastened to a pallet which holds cargo to the pallet during shipping, wherein the improvement comprises:

a pressure plate attached to a release shaft having a rotation restricting widthwise cross-section slidably mounted on the pallet, whereupon application of a force to the pressure plate the force is transmitted to strike and pivot the pawl thereby disengaging the pawl from the teeth of the ratchet to allow the strap to extend, thereby releasing tension holding the cargo to the pallet.